

## Team Las Vegas

### Marketing Jury Narrative



### Contents

Design Philosophy .....	2
Purpose .....	3
Unique House Features .....	6
The Target Client.....	10

Primary Faculty Contact:

Eric Weber

University of Nevada, Las Vegas

School of Architecture

4505 S. Maryland Parkway

Las Vegas, NV 89154

[eric.weber@unlv.edu](mailto:eric.weber@unlv.edu)

Primary Student Contact:

Ryan Manthei

University of Nevada, Las Vegas

School of Architecture

4505 S. Maryland Parkway

Las Vegas, NV 89154

[mantheir@unlv.nevada.edu](mailto:mantheir@unlv.nevada.edu)



U.S. DEPARTMENT OF ENERGY

SOLAR DECATHLON

UNLV

## Design Philosophy

Team Las Vegas is proposing an elegant, sustainable, and innovative net-zero home design as part of the 2020 Solar Decathlon supported by the Department of Energy and the National Renewable Energy Laboratory(NREL).

Imagine a home that captures energy instead of reflecting sunlight; one that filters greywater and sequesters carbon in its vegetation and soils; one that gives back to the ecosystem in which it resides.

The design philosophy imagines a new type of home that could transform the housing market in Las Vegas. The house incorporates all of the high- tech opportunities available, without focusing the design on these systems. The systems will support the project's conception, rather than being its driving force.



Mojave Bloom is a self-sufficient structure designed as an affordable home for one of our military veterans. Environmental technologies and renewable energy combine to allow the users to live grid-free in a place of their choosing without having to give up modern comforts. The final outcome from the project will be a home that is used in the competition and eventually brought back to Las Vegas for continued use and testing. Team Las Vegas considers our core mission remembrance and support for our veterans. Mojave Bloom's final destination is Las Vegas Community Healing Garden.

## Purpose

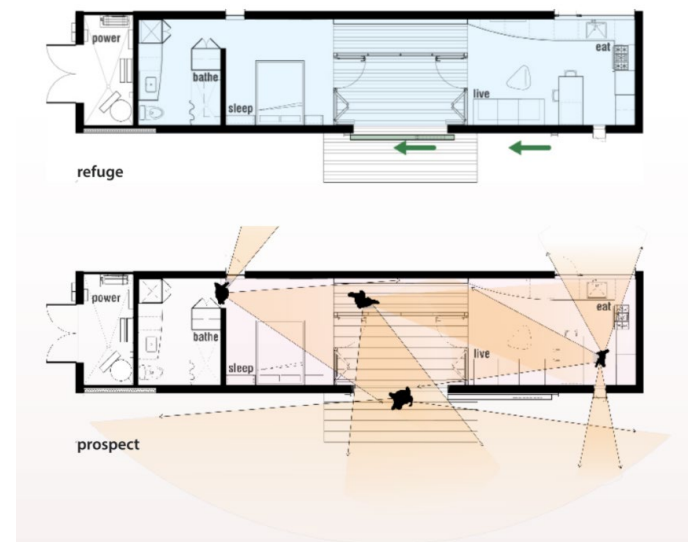
The house is designed to be a place of healing and respite for veterans suffering the adverse effects of wartime trauma. The home connects the resident to their environment through a carefully orchestrated procession of sensory experiences.

It caters to fit each day's unique needs, giving the resident the empowerment to control their activities, their reaction to the Vegas Valley weather conditions, and their unique need for more privacy or more social connection as they heal.

For veterans suffering from the effects of wartime trauma, Mojave Bloom provides a healing oasis in the middle of the harsh Mojave Desert through a calculated polyphony of sensory experiences.

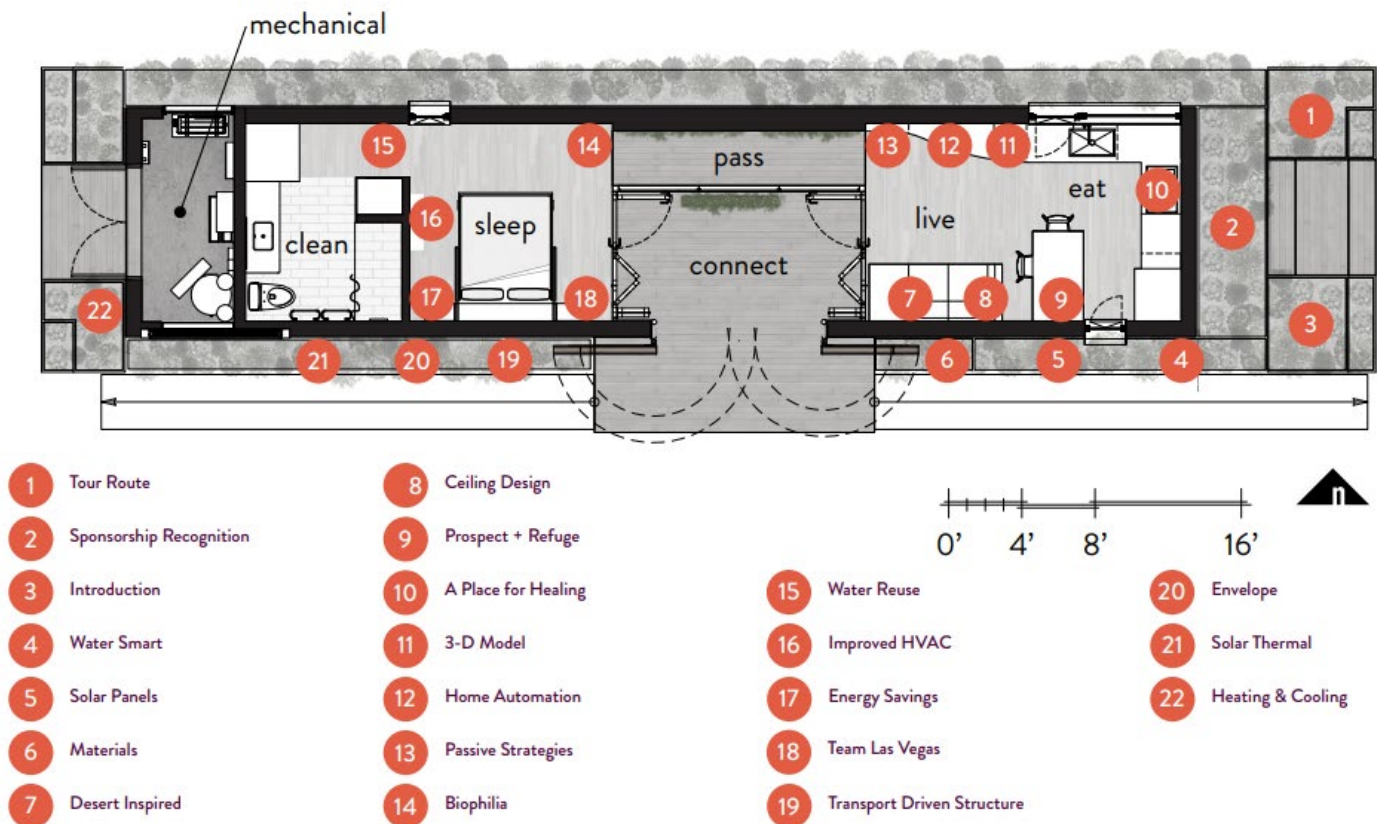
Efficient mechanical systems and the solidity of the enclosure provide comfort while lighting, sound, and air are used to address insomnia, PTSD, and non-rhythmic sensory stimuli.

With this efficient and deliberate design, Mojave Bloom maximizes efficiency and comfort so the occupant can focus on healing, helping them to reintegrate into their lives and families.



## Purpose (Continued)

# A Healing Tour





## Purpose (Continued)

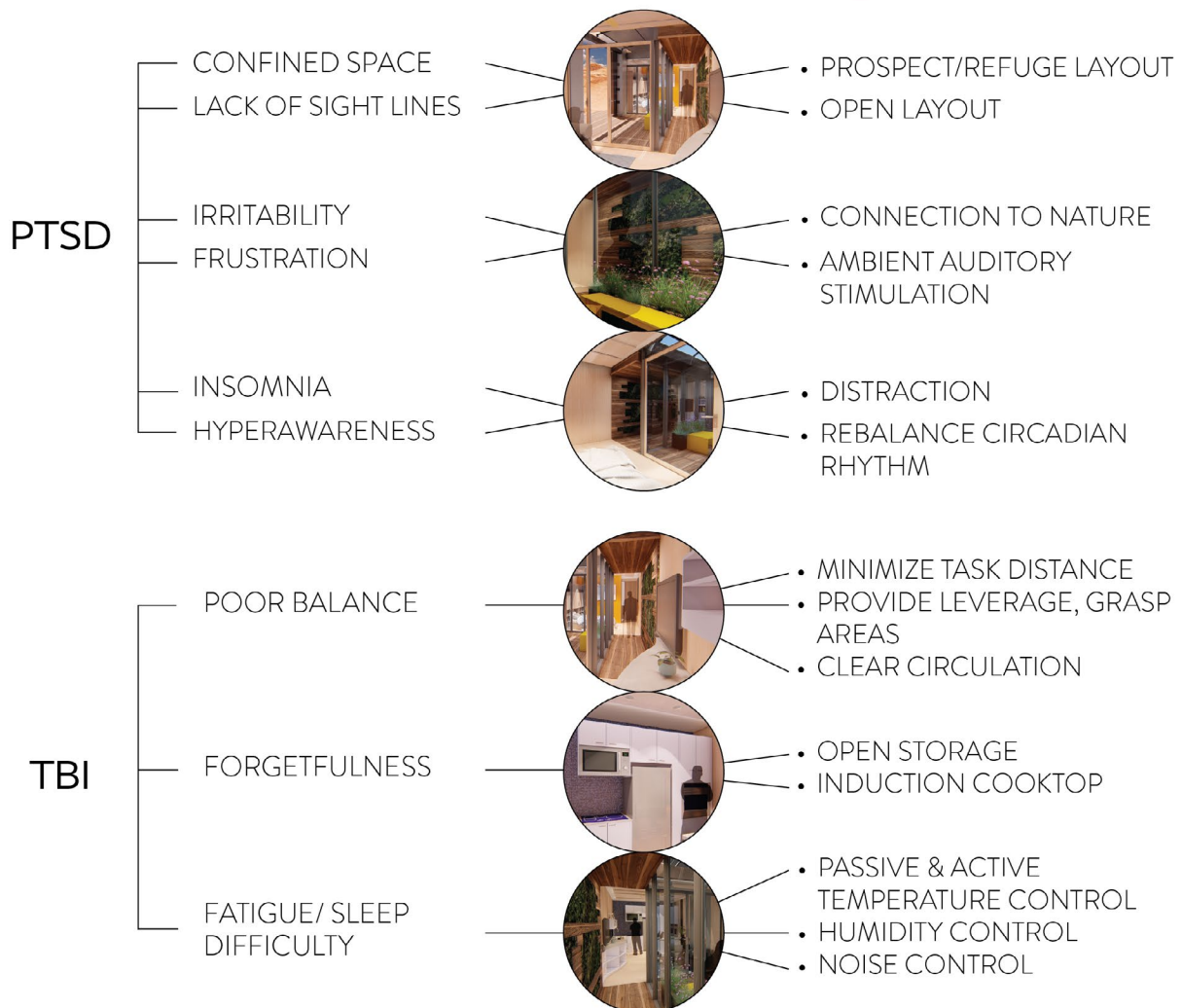
Mojave Bloom's final destination is Las Vegas Community Healing Garden. The garden features a Remembrance Wall memorializing October 1st shooting victims. Several best practices have been identified to provide for successful housing, including:

- Providing a safe and secure environment with the use of monitoring and diagnostic technologies and screens.
- Offering a sense of autonomy through spatial design and deliberate furniture and fixture selection
- A careful balance between public and private spaces
- Stimulation of both the senses and intellect with the integration of social and activity spaces, abundant landscaping and daylighting
- Using best practices to ensure the physical design addresses the needs of occupants who may have post-traumatic stress disorder (PTSD) and physical limitations due to their military service
- Developing an effective design for the harsh climate of the Mojave Desert.
- Building orientation to maximize daylighting and minimize heating loads
- Use of bifacial photovoltaic panels for increased renewable energy production and outdoor shade
- Overhangs, screens, and landscaping to further create shade and prevent harsh direct light
- Careful location of glazing and operable systems to manage passive ventilation
- Use of native vegetation, greywater management for efficient reuse
- An edible garden, living fence and screening for perceptual and psychological restoration, as well as general health maintenance.



## Purpose (Continued)

# A Place for Habilitation



## Unique House Features

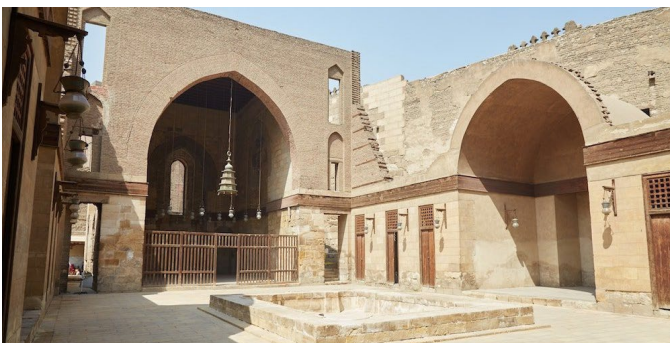
Mojave Bloom creates an oasis from the bustling downtown of Las Vegas and the Mojave Desert's harsh environment. Drawing inspiration from the traditional Islamic sahn, or courtyard, this house turns inward, sheltering the resident from heat and noise, and achieving a model of alfresco living otherwise unattainable in the southern Nevada climate.

The planted gate, living green wall, and operable window walls that separate the bedroom and living spaces from the courtyard are designed as a way of expanding the living spaces into the outdoor volume, as well as an act of empowerment for the user, a catalyst for the healing act of controlling one's environment.

This ability to manipulate space allows the resident to shift their home to meet their needs, adapting to the weather conditions of the Las Vegas Valley, their social activities, and their personal needs for connection or refuge while healing from trauma.



Mojave Bloom House; Center Walkway



Qalawun Complex; Museum in Cairo, Egypt



Mojave Bloom House; Foyer

## Unique House Features

While Mojave Desert doesn't scream endless grass lawns, the landscape is not short of color or vibrancy. Native species play an essential role in the design and daily experience of Mojave Bloom's residents.

To combat the southwestern prevailing winds that seasonally whip through the valley, the southern living green wall also acts as a windbreak, planted with heartier desert vines that will stand up to both the wind and the intensity of the southern sun. The sliding living green walls and operable window walls that separate the bedroom and living spaces from the courtyard are designed not only as a way of expanding the living spaces into the outdoor volume, but as an act of empowerment for the user, a catalyst for the healing act of controlling one's environment.

## No Watering Required



Our chosen plants can thrive in our environment and will provide the calm and healing atmosphere of the outdoors as well as being extremely easy to care for with their minimal watering needs. By selectively choosing native foliage, the healing properties they exhibit can continue to work all year long. From the meditative inner courtyard to the closeness of the indoor plant wall, these plants are an essential element of the design and surrounding environment.



## Unique House Features

The extreme heat, dryness, and plentiful sunshine of the Mojave Desert damages most conventional building materials over time, requiring homeowners to paint or replace materials regularly.

Our exterior cladding is a rain screen made with galvanized steel. This material will age gracefully, requiring minimal upkeep, while reflecting the many colors of our celebrated desert sunrises and sunsets. Interior materials and finishes were selected to help the occupant habilitate. PTSD and TBIs can cause vision problems; therefore, a contrast between vertical and horizontal surfaces is helpful.

Primary flooring and wall cladding are the same material, yet the wall cladding has a reveal between joints while the flooring is flush between joints, creating a visual contrast between the two applications. The

Living and Sleep spaces are dressed in White Maple tongue and groove flooring, while the Pass space is defined by Ash Thermory cladding on the ceiling, greenwall, and deck.



**ALVANIZED STEEL**



**WHITE MAPLE**



**HERMORY ASH**

## The Target Client

### How Design Respond to The Market?

Las Vegas is a city of enormous growth and diversity, it is a city that is constantly reinventing itself, and it is a city that is world renowned for its hospitality. Our design studio believes that this hospitality should not focused exclusively on the city's visitors, but rather extended to all the residents of Las Vegas.

UNLV's School of Architecture advocates the power of design and innovation to change lives. These instilled values guided our team to look at the Solar Decathlon not only as a chance to address sustainability and environmental concerns, but also as an opportunity to serve the at risk members of our community.

The war in the Middle East is the longest war in US history, and 1/3 of the service members who deploy return with combat induced

disability. The trauma doesn't stop when they return home. They face years of (re)habilitation, and often these disabilities are the root of even larger issues. These men and women have chosen to serve their country, and we believe that it is our responsibility as citizens to serve them.

Mojave Bloom empowers residents by giving them control over their environment. With the gates and adjustable shades over the courtyard windows, residents are free to enjoy the outdoors without sacrificing their privacy. The house's windows and skylight keep our resident connected to outside world with visual access as well as providing connection to the experience of light and shadows as the day progresses. This connection has been shown to improve sleep cycles, which reduces stress.